

IN THE CLAIMS

1. (Currently Amended) An audio decoding device including a jitter buffer comprising a plurality of buffer portions for storing a received packet, and decoding means for decoding the packet stored in the jitter buffer, wherein the received packet is stored in a position corresponding to its packet number in the jitter buffer by using a packet number of a packet stored in a buffer portion at an output end of the jitter buffer as a reference packet number,

the audio decoding device comprising:

 playback speed change means for changing, with respect to a decoded audio signal obtained by the decoding means, the playback speed thereof;

 an output buffer for temporarily storing a digital audio signal outputted from the playback speed change means;

 means for reading out the digital audio signals stored in the output buffer at predetermined time intervals;

 playback speed control means for controlling the playback speed change means on the basis of the position in which the received buffer is the number of packets stored in the jitter buffer; and

 decoding timing control means for controlling the timing of decoding by the decoding means on the basis of the amount of data stored in the output buffer;

wherein

a first region, a second region and a third region are set within the jitter buffer, the first region being composed of a given number of buffer portions from the output end of the jitter buffer, the second region being composed of a given number of buffer portions and lying between the first region and an opposite end of the output end in the jitter buffer, and the third region being composed of a given number of buffer portions and lying between the second region and the opposite end of the output end in the jitter buffer; and

the playback speed control means controls the playback speed change means such that the playback speed is reduced when the received packet is stored in the first region of the jitter buffer, while controlling the playback speed change means such that the playback speed is increased when the received packets are stored in the third region of the jitter buffer a predetermined consecutive number of times or more.

Claim 2 (cancelled)

3. (Currently Amended) The audio decoding device according to claim 1 ~~either one of~~ claims 1 and 2, characterized in that

the decoding timing control means requires the decoding means to decode the packet when the amount of data stored in the output buffer is less than a predetermined reference value.

4. (Currently Amended) An audio decoding device including a jitter buffer comprising a plurality of buffer portions for storing a received packet, and decoding means for decoding the packet stored in the jitter buffer, wherein

the received packet is stored in a position corresponding to its packet number in the jitter buffer by using a packet number of a packet stored in a buffer portion at an output end of the jitter buffer as a reference packet number, and

a first region, a second region and a third region are set within the jitter buffer, the first region being composed of a given number of buffer portions from the output end of the jitter buffer, the second region being composed of a given number of buffer portions and lying between the first region and an opposite end of the output end in the jitter buffer, and the third region being composed of a given number of buffer portions and lying between the second region and the opposite end of the output end in the jitter buffer,

the audio decoding device comprising:

delay time control means for carrying out such control that a delay time period elapsed from the time when the packet is stored in the jitter buffer until the packet is decoded is lengthened when the received packet is stored in the first region of number of packets stored in the jitter buffer is less than a first predetermined reference value, while carrying out such control that a delay time period elapsed from the time when the packet is stored in the jitter buffer until the packet is decoded is shortened when the received packets are stored in the third region of the jitter buffer a predetermined consecutive number of times or more a state where the number of packets stored in the jitter buffer is more than a second predetermined reference value which is not less than the first predetermined reference value is continued for a predetermined time period.

5. (Currently Amended) The audio decoding device according to claim 4, characterized in that

the delay time control means comprises

playback speed change means for changing, with respect to a decoded audio signal obtained by the decoding means, the playback speed thereof,

an output buffer for temporarily storing a digital audio signal outputted from the playback speed change means,

means for reading out the digital audio signals stored in the output buffer at predetermined time intervals, and

means for controlling the playback speed change means such that the playback speed is reduced when the received packet is stored in the first region of the jitter buffer ~~number of packets stored in the jitter buffer is less than the first predetermined reference value~~, while controlling the playback speed change means such that the playback speed is increased when the received packets are stored in the third region of the jitter buffer a predetermined consecutive number of times or more, and

decoding timing control means for controlling the timing of decoding by the decoding means on the basis of the amount of data stored in the output buffer ~~a state where the number of packets stored in the jitter buffer is more than the second predetermined reference value which is not less than said first predetermined reference value is continued for a predetermined time period.~~

6. (Currently Amended) The audio decoding device according to claim 4, characterized in that

the delay time control means controls the packet to be read out of the jitter buffer and fed to the decoding means such that the packet read out of the jitter buffer at the timing of packet reading is repeatedly decoded at the timing of packet reading continued a plurality of number of times including the current time, and the read-out of the packet from the jitter buffer is inhibited during the decoding when the received packet is stored in the first region of the jitter buffer the number of packets stored in the jitter buffer is less than the first predetermined reference value, while controlling the packet to be read out of the jitter buffer and fed to the decoding means such that the plurality of packets stored in the jitter buffer are read out at a time at the timing of packet reading, and only one of the plurality of packets read out is decoded when the received packets are stored in the third region of the jitter buffer a predetermined consecutive number of times or more one of the packets is decoded and the other packets are discarded when the state where the number of packets stored in the jitter buffer is more than the second predetermined reference value which is not less than the first predetermined reference value is continued for a predetermined time period.

7. (Currently Amended) A network telephone set including a jitter buffer comprising a plurality of buffer portions for storing a received packet, and decoding means for decoding the packet stored in the jitter buffer, wherein the received packet is stored in a position corresponding to its packet number in the jitter buffer by using a packet number of a packet stored in a buffer portion at an output end of the jitter buffer as a reference packet number,

the network telephone set comprising:

playback speed change means for changing, with respect to a decoded audio signal obtained by the decoding means, the playback speed thereof;

an output buffer for temporarily storing a digital audio signal outputted from the playback speed change means;

means for reading out the digital audio signals stored in the output buffer at predetermined time intervals;

playback speed control means for controlling the playback speed change means on the basis of the position in which the received packet is of the number of packets stored in the jitter buffer; and

decoding timing control means for controlling the timing of decoding by the decoding means on the basis of the amount of data stored in the output buffer;

wherein

a first region, a second region and a third region are set within the jitter buffer, the first region being composed of a given number of buffer portions from the output end of the jitter buffer, the second region being composed of a given number of buffer portions and lying between the first region and an opposite end of the output end in the jitter buffer, and the third region being composed of a given number of buffer portions and lying between the second region and the opposite end of the output end in the jitter buffer; and

the playback speed control means controls the playback speed change means such that the playback speed is reduced when the received packet is stored in the first region of the jitter buffer, while controlling the playback speed change means such that the playback speed is increased when the received packets are stored in the third region of the jitter buffer a predetermined consecutive number of times or more.

Claim 8 (cancelled)

9. (Currently Amended) The network telephone set according to claim 7 ~~either one of claims 7 and 8~~, characterized in that

the decoding timing control means requires the decoding means to decode the packet when the amount of data stored in the output buffer is less than a predetermined reference value.

10. (Currently Amended) A network telephone set including a jitter buffer comprising a plurality of buffer portions for storing a received packet, and decoding means for decoding the packet stored in the jitter buffer, wherein the received packet is stored in a position corresponding to its packet number in the jitter buffer by using a packet number of a packet stored in a buffer portion at an output end of the jitter buffer as a reference packet number.

the network telephone set comprising:

delay time control means for carrying out such control that a delay time period elapsed from the time when the packet is stored in the jitter buffer until the packet is decoded is lengthened when the received packet is stored in the first region of ~~number of packets stored in the jitter buffer is less than a first predetermined reference value~~, while carrying out such control that a delay time period elapsed from the time when the packet is stored in the jitter buffer until the packet is decoded is shortened when the received packets are stored in the third region of the jitter buffer a predetermined consecutive number of times or more ~~a state where the number of packets stored in the jitter buffer is more than a second predetermined reference value which is not less than the first predetermined reference value is continued for a predetermined time period.~~

11. (Currently Amended) The network telephone set according to claim 10, characterized in that

the delay time control means comprises

playback speed change means for changing, with respect to a decoded audio signal obtained by the decoding means, the playback speed thereof,

an output buffer for temporarily storing a digital audio signal outputted from the playback speed change means,

means for reading out the digital audio signals stored in the output buffer at predetermined time intervals, and

means for controlling the playback speed change means such that the playback speed is reduced when the received packet is stored in the first region of the jitter buffer ~~number of packets stored in the jitter buffer is less than the first predetermined reference value~~, while controlling the playback speed change means such that the playback speed is increased when the received packets are stored in the third region of the jitter buffer a predetermined consecutive number of times or more, and

decoding timing control means for controlling the timing of decoding by the decoding means on the basis of the amount of data stored in the output buffer ~~a state where the number of packets stored in the jitter buffer is more than the second predetermined reference value which is not less than said first predetermined reference value is continued for a predetermined time period.~~

12. (Currently Amended) The network telephone set according to claim 10, characterized in that

the delay time control means controls the packet to be read out of the jitter buffer and fed to the decoding means such that the packet read out of the jitter buffer at the timing of packet reading is repeatedly decoded at the timing of packet reading continued a plurality of number of times including the current time, and the read-out of the packet from the jitter buffer is inhibited during the decoding when the received packet is stored in the first region of the jitter buffer the number of packets stored in the jitter buffer is less than the first predetermined reference value, while controlling the packet to be read out of the jitter buffer and fed to the decoding means such that the plurality of packets stored in the jitter buffer are read out at a time at the timing of packet reading, and only one of the plurality of packets read out is decoded when the received packets are stored in the third region of the jitter buffer a predetermined consecutive number of times or more ~~one of the packets is decoded and the other packets are discarded when the state where the number of packets stored in the jitter buffer is more than the second predetermined reference value which is not less than the first predetermined reference value is continued for a~~ predetermined time period.